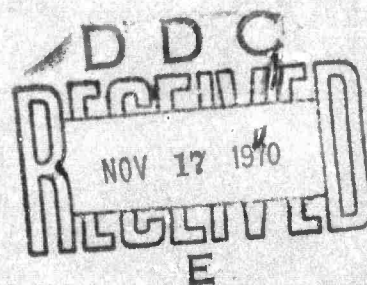


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DIFFERENTIATION MATCHING

Uriel G. Foa

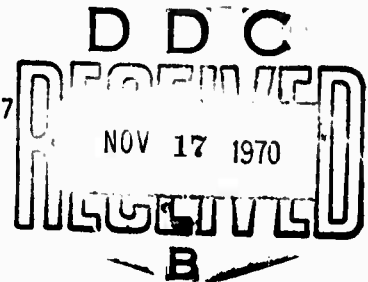
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## DIFFERENTIATION MATCHING

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### Abstract

An individual will be more effective in his adjustive and task-related functions when the degree to which he distinguishes among elements of his environment or other people matches the differentiation found in the environment or in the other people. Differentiation matching is discussed in three settings: Matching of the group leader's cognition to the task situation; communication among members of different cultures; and a comparison of the interpersonal cognitive structures of mental patients and normal individuals. The effects of differentiation matching are related to problems of cognitive development, its cultural diversities and its pathology.

## DIFFERENTIATION MATCHING<sup>1</sup>

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This paper proposes "differentiation matching" as an explanatory concept which may enable us better to understand a wide variety of phenomena in individual and group psychology. Differentiation, conceptually related to cognitive complexity, is here defined as the degree to which an individual tends to distinguish among different elements in his environment. Differentiation matching is defined as the degree to which the individual's tendency to differentiate appropriately matches the diversity of elements in the environment. Where the diversity of elements in the environment is matched by the individual's ability or tendency to differentiate, we expect the individual to be more effective in his adjustive as well as task-related functions.

The findings discussed in this paper come from a variety of research settings which include leadership in task groups, cross-cultural communication, and psychopathology. Converging evidence from such disparate areas is not only intrinsically interesting but also suggests that the notion of differentiation matching has some integrative power and may provide a link among results previously thought to be theoretically unrelated.

### Differentiation and Cognitive Complexity

There has been considerable disagreement as to whether the tendency to differentiate, i.e., to be cognitively complex, is a general personality trait or whether it is relatively specific to a particular cognitive domain--

or even to given variables within the same domain. The earlier view that cognitive complexity is a general trait (Gollin & Rosenberg, 1956) has not been supported by some more recent studies (Scott, 1963; Vannoy, 1956). This suggests that little or no relationship may exist among complexity measures in different domains.

One difficulty in reconciling these conflicting results may be the widespread attempt to study cognitive organization without spelling out the coordinates of the cognitive space and the position of the variables within it. The understanding of cognitive complexity requires the development of adequate structural models. In this respect, work on cognitive complexity shares the problems found in many other aspects of personality research (Pepitone, 1966).

One model which might provide a fruitful approach is suggested by facet analysis. Facets are underlying dimensions which are logically derived. To illustrate, in an analysis of interpersonal relations we might postulate four dimensions, or facets: (a) The actor; Self or Other; (b) What is he doing: giving or denying; (c) What: love or status; (d) To whom: to himself or to another. A relationship could, therefore, be characterized as one in which, for example, Person A is giving love to another, or one in which Person A is denying status to himself (i.e., belittling himself).

#### A Facet Analysis Approach to Differentiation

The method of facet analysis defines variables as the Cartesian products of the elements of underlying sets or facets (Foa, 1965, 1968). Facets are defined as dimensions in which the elements take on certain values. Thus, the facet, Actor, takes on the elements, Self or Other. A particular variable, e.g., the statement, "A gives love to B," can now be located in terms of the

four dimensions which we indicated above, viz., actor (self/other), action (giving/denying), interpersonal resource (love/status), recipient of action (self/other), which represents a Cartesian space of  $2 \times 2 \times 2 \times 2$  elements. The validity of the method is defined by the degree to which we can predict the empirical relationships among the variables.

In terms of our present interests, it is proposed that an individual may differentiate among the elements of any given facet (e.g., giving status versus giving love) and that this differentiation is then reflected in the variables which differ in the elements of this particular facet (e.g., A giving status to his boss but love to his father). The degree of differentiation is thus specific to the elements of each facet rather than to variables. Nevertheless, a fairly general lack of complexity may result when a facet occurring in many variables is undifferentiated. This is particularly true of the object variable, self vs. non-self, which seems to provide the basis on which further differentiations are built (Foa, 1966; Foa, Triandis, & Katz, 1966).

We assume that differentiation is learned primarily through differentiated rewards and punishments mediated by the environment (and, to some degree, also through imitation). One environment might mete out punishment whenever the individual fails to make very fine differentiations in a particular domain, while another environment may be very tolerant of poor differentiation among elements in the same domain. Our American culture demands that we differentiate very distinctly among time periods during the day so that we can meet appointments and perform various duties at scheduled times. Other cultures are not particularly time-bound and therefore do not punish the tardy individual. Conversely, the American culture is relatively lenient of individuals who fail to make fine differentiations in the status which they have in

relation to others. The Thai culture, in contrast, demands considerable sensitivity to status differences and, therefore, punishes the individual who is not able to make the required differentiations. It follows from these considerations that the structure of the environment provides a model or a template for building the cognitive structure. Since environments change their demands for differentiation, an individual may continually have to learn how much he needs to differentiate. Where he fails to do so, problems in matching may bring about ineffective task and interpersonal behavior. To test this hypothesis we turn to the analysis of several studies from different areas.

#### Matching between Leader and Task

A transactional approach to leadership theory suggests that different types of situations require different types of leadership. Fiedler (1967) recently proposed a systematic solution of this problem in a series of studies which seek to integrate theory and empirical research on leadership. The major contribution of this work may well be a system for classifying both groups and leaders and showing that effective performance depends upon the appropriate matching of a given type of leader with a given type of group.

The group-task situations in Fiedler's theory are classified in terms of the "favorableness" of the situation for the leader, that is, the degree to which a situation gives the leader control and influence in the group. This dimension was defined originally (Fiedler, 1964) by three variables: (a) leader-member relations; (b) structure of the task; and (c) leader-position power. An ordering of these three variables led to a dimension of "situational favorableness." In more recent studies such other variables as cultural heterogeneity, stressfulness, and group member attributes have been used for ordering the groups in terms of situational favorableness (Fiedler, 1967).



The classification of leaders is based upon the leader's perception of his co-workers. Specifically, the leader's perception in this domain is expressed by the Least Preferred Co-worker (LPC) score. This score is obtained by asking the individual to think of all the persons with whom he has ever worked and then to describe, on several bi-polar adjective scales, the person with whom he has had most difficulty working; i.e., his least preferred co-worker. The more favorable the leader's rating of his LPC, the higher his LPC score.

A very large number of laboratory and field studies by Fiedler and his associates (1967) have shown that situations of moderate favorableness call for high LPC leaders while highly favorable or unfavorable situations call for low LPC leaders, i.e., persons who describe their least preferred co-workers in very unfavorable, rejecting terms.

Previous interpretations of the Least Preferred Co-worker score have been primarily in motivational terms. The high LPC leader has been described as someone who seeks his major need gratification from a position of prominence and good interpersonal relations with others. The low LPC person has been described as someone who seeks need gratification from performance and achievement on the task itself. This interpretation, however, has not been supported by recent research (Mitchell, 1970). More specifically, it has been found that under certain circumstances the high LPC leader is task-oriented and the low LPC leader is interpersonal relations-oriented.

The present paper explores an alternative explanation in cognitive, rather than motivational, terms which supplements the original interpretation for the LPC score and the basis for matching the situation and the leader. Specifically, it proposes that:

(1) A high LPC leader differentiates more clearly among the various aspects of the task situation than does a low LPC leader. This degree of differentiation refers to the leader's role in the task situation. It does not necessarily extend to other roles which he might occupy in a different situation.

(2) A situation of moderate favorableness is generally more heterogeneous in evaluative (good-bad) terms, with regard to its various components, than a very favorable or very unfavorable situation. Situations of "moderate favorableness" usually mean that some aspects (e.g., leader-member relations, position power, etc.) are unfavorable while others are favorable for the leader. In very favorable or very unfavorable situations the level of difficulty of the various aspects is likely to be about the same, that is, all will be favorable or all will be unfavorable.

(3) In a situation requiring more differentiation (moderate favorableness) a differentiating leader (high LPC) is more effective than a non-differentiating leader (low LPC). A tendency to differentiate (high LPC), where this is not required may, on the other hand, be detrimental to effective performance. This would be the case where the situation is either very favorable or very unfavorable.

In short, effective performance should be obtained when the degree to which the leader differentiates among personal attributes of other group members is matched by the degree of differentiation required by the task situation.

#### The LPC as a Measure of Differentiation

The suggestion that LPC is a correlate of a cognitive complexity score has been made by Schroder, Driver and Streufert (1967, p. 134). The cognitive

aspects of this measure have also been discussed by Bass, Fiedler and Krueger (1964) and, more recently, by Shima (1968). The LPC scale contains indeed both task-oriented attributes ("efficient," "helpful") and interpersonal-oriented attributes ("friendly," "pleasant"). Most of the items are, however, of the latter type, and the LPC score is thus largely determined by them. The respondent is instructed to use the items for describing "the person with whom you had the most difficulty in getting a job done." In view of these instructions most subjects, but not necessarily all of them, are likely to describe their least preferred co-workers as inefficient, uncooperative and frustrating. If, however, the subject differentiates between task performance and interpersonal relations he may also describe the least preferred co-worker as friendly, accepting, warm. Since the majority of items are interpersonal, the differentiating respondent is more likely to obtain a high LPC score. On the other hand, a respondent who does not differentiate between task and interpersonal items will tend to describe the least preferred co-worker not only as inefficient, but also as cold, rejecting and unpleasant. His LPC score will be low. These considerations suggest that a high differentiator will tend to have a high LPC score and a low differentiator a low LPC score. It is possible, however, that a high differentiator may ascribe only a few positive interpersonal traits to his least preferred co-worker, precisely because he differentiates among these traits: In this case his LPC score will be low, in spite of his high differentiation. Conversely, a low differentiator may give high ratings, on both task and interpersonal traits, to his least preferred co-worker, thus obtaining a high LPC score. These cases tend to be quite infrequent, so that, on the whole, a positive monotonic relationship between differentiation and LPC can be expected. A similar and more detailed

analysis of this problem (with regard to a similar instrument, the Assumed Similarity between opposites or ASo score), is given by Steiner and McDiarmid (1957).

If subjects with high LPC scores do differentiate more between task and interpersonal attributes, one should expect that the correlation between task and interpersonal items of the LPC instrument will be lower for high LPC respondents than for low LPC ones. This hypothesis was tested on 147 subjects, dichotomized at the median, so that 85 had low LPC and 82 high LPC scores. For each subject a separate score was computed for task items, interpersonal items and for a residual class of items which were somewhere between the first two classes. The sum of these three scores is, of course, the original LPC score. Two items were found to be task-relevant: Efficient-Inefficient and Helpful-Frustrating. Three items were classified as mixed: Cooperative-Uncooperative; Supportive-Hostile; and Self-assured-Hesitant. The remaining 12 items were considered as interpersonal. Some examples are: Friendly-Unfriendly; Tense-Relaxed; Cold-Warm; Open-Guarded. The correlations between the scores on the three types of items, computed separately for low and high LPC, are given in Table 1.

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Insert Table 1 about here  
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First let us note that, for both low and high LPC, the correlation between task and interpersonal scores is lower than the correlation of either of these scores with the mixed score. In fact, the two matrices of Table 1 constitute small simplexes, the mixed variable occupying an intermediate position between the two others. This lends some support to our classification of items into three types. More directly relevant to our hypothesis is

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TABLE 1  
Intercorrelation among Scores for Three Types of  
LPC Items for High and Low LPC Subjects

<u>Type of Items</u>	High LPC			Low LPC		
	<u>Task</u>	<u>Mixed</u>	<u>Interpersonal</u>	<u>Task</u>	<u>Mixed</u>	<u>Interpersonal</u>
Task	--	40	-05	--	54	20
Mixed	40	--	23	54	--	26
Interpersonal	-05	23	--	20	26	--

Note: Decimal point omitted.

the fact that each correlation for the group of low LPC subjects is higher than the corresponding one for the high LPC subjects, as predicted. The probability of obtaining these differences under random conditions is .01. Even for the low LPC subjects, however, the correlation between task and interpersonal variables is quite low: although they differentiate less than the high LPC, they still imply some differentiation between the two types of items.

This internal analysis of the LPC instrument cannot be regarded as conclusive. In fact, if the LPC score is related to differentiation between interpersonal relations and the task, difference in complexity should be reflected not only by responses on the LPC scale but also by other behavioral variables where these facet elements appear. A more stringent test of the hypothesis is provided by the results of another study with different subjects and including variables other than LPC.

After completing an experimental group task, 32 leaders rated their groups on the following five scales: task performance of the group; the leaders' own task performance; the leaders' behavior toward the group; their own behavior toward other group members; behavior of the group toward the group (e.g., the group atmosphere was pleasant). The intercorrelation among the five scales for the 16 high and 16 low LPC leaders is given in Table 2. High intercorrelations indicate an undifferentiated perception of the situation while low intercorrelations indicate correspondingly more differentiation. Thus, according to the hypothesis, correlations should be higher for the low LPC leaders.

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Insert Table 2 about here  
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TABLE 2  
 Intercorrelation among the Rating Scales  
 for High and Low LPC Leaders

<u>Leader Ratings of:</u>	High LPC					Low LPC				
	GT	LT	LG	LM	GG	GT	LT	LG	LM	GG
Performance of Group task (GT)	--	47	41	16	69	--	65	79	63	46
Performance of a Leader Task (LT)	47	--	72	44	36	65	--	75	72	46
Leader Behavior to Group (LG)	41	72	--	80	47	79	75	--	93	57
Leader's Behavior to Group Members (LM)	16	44	80	--	32	63	72	93	--	57
Group Behavior to Group (GG)	69	36	47	32	--	46	46	57	57	--

Note: Decimal point omitted.

With the exception of only one case, the correlation between any two given variables is indeed lower for the high LPC leader than for the low LPC leader. For example, the correlation between the leader's ratings describing his behavior toward the task and those describing his behavior toward a member is .44 for the high LPC leader and .72 for the low LPC leader. The difference between the two correlation matrices is significant at the .01 level. Since a lower correlation coefficient indicates more differentiation, the results support the idea that the high LPC leader differentiates more than the low LPC leader between task and interpersonal behavior, as well as between his own behavior and group behavior. Hence, low LPC persons should also have wider circles of acquaintances. This was borne out by Steiner's study (1959).

#### Some Correlates of the LPC Score

Further, but indirect, support for the cognitive interpretation of the LPC score is provided by its relationship to a number of other complexity and interpersonal variables. If differentiation can be specific to a given dimension, as suggested by Scott (1963) and Vannoy (1965), the relationship between LPC score and other measures of differentiation cannot, indeed, be considered decisive with regard to the present interpretation of LPC. Yet some relations have been found. A sample of 100 University of Illinois students completed two of Scott's (1962) sorting tasks. They were asked to arrange a list of objects (nations, groups, etc.) into categories which "belong together" and to indicate what they thought the objects have in common. Thus, Italy, Greece, and Spain might be classified as peninsulas, Spain, Yugoslavia and others as dictatorships, etc. The score indicates the number of different dimensions used by the subject in sorting a set of objects like groups or nations. The LPC score of these subjects correlated .51 with the



group domain and .28 with the nations domain of Scott's sorting task. The correlation between these two sorting tasks was .57. Lower correlations, but in the same order, were obtained for female subjects who, on the average, tended to have considerably less previous experience in work groups. This result has been replicated (Mitchell, 1970) with a sample of 49 males yielding a correlation of .49 ( $p < .05$ ).

#### Situational Differentiation

The theoretical considerations and the results reviewed so far lend support to the hypothesis that the LPC score provides some indication of the extent to which the subject differentiates between interpersonal relations and task. Let us now turn to the corresponding differentiation in the group-task situation. The Contingency Model postulates three dichotomized variables (leader-member relations, task structure, and the leader's power position) which were originally used by Fiedler (1967) for ordering task situations according to the degree of difficulty faced by the group leader. The first variable, leader-member relations, refers to the degree of difficulty in the interpersonal area. The situation is assumed to be less difficult when these relations are good than when they are poor. The second variable, task structure, refers to difficulty in the task area: a structured task is less difficult for the leader than an unstructured one since it provides the leader with greater influence and control. Position power is also a task variable as its usefulness for the leader appears to be inversely related to task structure. Fiedler (1967, pp. 144) notes that the degree of formal leadership power is less important when the task is highly structured. More power will, therefore, be needed in an unstructured task than in structured ones to retain the same degree of control over task performance. A situation with an

unstructured task will be easier for the leader when he has high power. Task structure and position power thus appear to be in some respects interchangeable aspects of the task situation, both affecting the leader's control of task-oriented behavior.

When the task situation is either very easy or very difficult the interpersonal and task aspects will tend to be equally favorable or equally unfavorable to the leader, so that no differentiation will be required between them. However, this is not the case in situations of intermediate favorableness. Here, a particular aspect, say, leader-member relations, may be favorable, while another one, e.g., task structure, is unfavorable. Thus, a situation of medium favorableness is likely to be more differentiated than a situation in which leader-member relations as well as position power and task structure are very favorable or unfavorable. When group situations are ordered from least to most favorable, the differentiation among the various aspects of the situation, according to level of favorableness, will necessarily be minimal at the extremes (all good or all bad) and it will increase toward the mid-point of the situational favorableness continuum (some good and some bad).

It should be expected, then, that a leader who differentiates (high LPC) will find it easier to perform in a situation presenting difficulties in either interpersonal relations or task, thus requiring differentiation between them. A low LPC leader, on the other hand, will find it easier to perform when both or neither the task and the interpersonal relations present difficulties, so that a differentiation between them is unnecessary. A leader making a differentiation not required by the situation will tend to focus attention on a given aspect rather than on the total situation,

so that he will be less effective. Such a maladjustive effect of over-differentiation, in a cross-cultural context, will be discussed later.

#### Cognitive and Situational Differentiation Compared

To test whether the Contingency Model can be reinterpreted in cognitive terms, the results of a large number of studies reported by Fiedler and his associates (Fiedler, 1967) were re-analyzed. These studies give the correlation between the LPC score of the leader and a measure of task performance, under various conditions of situational favorableness. In the re-analysis, situations were classified according to whether they presented difficulties in either the interpersonal or task aspects, in neither aspect, or in both. According to our hypothesis, the high LPC leader should perform more effectively when only one aspect of the situation is difficult, so that the correlation between LPC and performance should be positive in this case. The low LPC leader, on the other hand, should be more effective in situations which are difficult in both aspects or neither aspect, so that these correlations should be negative.

Table 3 summarizes Fiedler's findings which are described in detail elsewhere (Fiedler, 1967) as well as the re-analysis. It gives the frequency distribution of 70 correlation coefficients between performance and LPC score according to the sign of the correlation and to the favorableness of the situation in the task and interpersonal areas. The correlation is negative when the two areas are undifferentiated: the low LPC leader is more effective in this situation. When the two areas differ in favorableness, the high LPC leader obtains better performance: the correlations are positive. In octants 2 and 7, unstructured task and strong position power, the task situation has been labeled as favorable, in keeping with

the notion that strong power will reduce the difficulty posed by the unstructured task. The results support this interpretation, most coefficients being positive. The appearance of some negative coefficients in this octant suggests that strong position power and an unstructured task do not produce a task situation as favorable as those with a structured task.

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Insert Table 3 about here  
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The relationship presented in Table 3 has been discussed in Fiedler's previous work. The emphasis here is on relating the notion of the difficulty of the situation to the novel idea of differentiation between types of difficulties in task and interpersonal relations. In this manner a conceptual link has been provided between cognitive organization of the leader and the cognitive requirements of the task--in short, between the leader's differentiation abilities and the differentiation embedded in the situation. Such a conceptual link provides a possible explanation for the different performance of different types of leaders in various situations, appearing in Fiedler's data.

Cognitive and Situational Differentiation: Some further findings

Two later studies by Mitchell (1970) also indicated that the cognitive complexity of high and low LPC subjects was different with regard to their perceptions of hypothetical task situations. In both studies subjects were asked to make judgments about situations which included information about the structure of the task and the interpersonal relations. It was found in both cases that the high LPC subjects used more varied information and used it in a more differentiated way than did the low LPC subjects. It appears, therefore, that this relationship has been fairly well established

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TABLE 3  
Sign of Correlation between Performance  
and LPC Scores as Related to the Situation

Fiedler's Classification				Reclassification			
Octant	Leader- Member Relations	Task Structure	Leader's Position Power	Favorableness of the situation with respect to		Frequency of positive and negative corre- lations between leader LPC and group performance	
				Inter- personal Relations	Task	Positive	Negative
1	Good	Structured	Strong	High	High	--	9
2	Good	Structured	Weak	High	High	--	5
3	Good	Unstructured	Strong	High	High	3	10
4	Good	Unstructured	Weak	High	Low	10	1
5	Poor	Structured	Strong	Low	High	6	--
6	Poor	Structured	Weak	Low	High	--	--
7	Poor	Unstructured	Strong	Low	High	9	4
8	Poor	Unstructured	Weak	Low	Low	1	12

and other research indicates that the matching idea has been supported under other conditions.

Using measures of differentiation of a different type Tuckman (1967) was able to show that high differentiators perform significantly better than low differentiators in an abstract and unstructured group task. In his study low differentiators were not found superior to higher ones in a more routine and structured task. Tuckman hypothesized that matching of performers to task is only one of the conditions of success, the other being matching among performers. His findings, however, would have been easier to interpret if he had restricted his manipulation to complexity matching, instead of combining it with degree of dominance. Previous studies by Tuckman (1964) and by Schroder, Driver, & Streufert (1967) have shown that groups composed of "abstract" members (complex) perform better on complex tasks than groups composed of "concrete" members. The effects of matching differentiation among performers in a task which appears to pose particular differentiation requirements is discussed next.

#### Matching Across Cultures

In each one of the studies discussed so far, the subjects were from the same culture. In spite of the common culture, individual differences in degree of differentiation were found. These studies would not have been possible in absence of such differences, but then, of course, the problem of matching would not have occurred at all.

Yet it seems plausible to suggest that each culture provides its members with a specific differentiation pattern so that members of the same culture will tend to differentiate similarly in those facets for which their culture provides a standard of differentiation. It has been suggested

elsewhere (Foa, 1964; Foa, Triandis & Katz, 1966; Foa & Foa, in press) that, in the development of interpersonal behavior, a child tends to acquire differentiation to a degree which is appropriate in his culture. In this way his differentiation tends to match cultural requirements. It follows from this reasoning that cultures will vary in their standards of differentiation for specific facets, so that some differentiation mismatching can be expected when members of different cultures interact.

Some evidence on cross-cultural differences in the differentiation of the facets of interpersonal behavior has been reported a few years ago (Foa, 1964). It was found that Middle Easterners differentiate more than Europeans between self and spouse and less than Europeans between love and status. A corollary of these results is that differentiation between variables like "giving status to self" and "giving status to spouse" (which differ in the Self-Spouse facet) is stronger for Middle Easterners than for Europeans, while differentiation between "giving love to spouse" and "giving status to spouse" (which differ in the Love-Status facet) is stronger for the latter group than for the former one. Differentiation between the variables of each pair depends, indeed, on differentiation of the facet elements which are not alike in the two variables: self-spouse in the first pair and love-status in the second one.

More recently a large number of critical episodes involving interaction between Americans and people from some other cultures was collected by asking individuals with cross-cultural experience (military, businessmen, exchange students) to describe an episode which changed for better or worse his perception of the other culture. An analysis of the American-Arab incidents (Foa & Chemers, 1967) revealed that the vast majority of them

could be explained by two differences in differentiation between the two cultures. The Arabs differentiate more than Americans in the behavior appropriate for roles of the same social institution (i.e., school, home, business, etc.), but differing in power position: for the Arab, more than for the American, one does not behave toward his father as toward his son, toward his boss as toward a subordinate, toward a professor as toward a student. On the other hand, Americans differentiate more than Arabs in the behavior appropriate to roles having a similar power relationship, but belonging to different social institutions: for the Arab more than the American, the boss or the professor is some sort of father and the argument "give me a job because I am your cousin" is likely to impress an Arab more than an American.

A preliminary analysis of episodes from the Thai culture suggests similar results. In fact, these two styles of differentiation may be fairly characteristic of comparisons between traditional cultures and modern industrial societies. Once again, the degree of differentiation is specific to given facets, so that it would be pointless to ask which culture is more complex.

It is quite possible that the ability to differentiate is not without limits, so that, when a new differentiation becomes necessary in roles to match the environmental situation, some other, less necessary, differentiation shrinks, to avoid an over-extension of overall differentiation. In a very complex cognitive structure the problem of maintaining the self-identity of the subject may indeed become critical. Complete differentiation means lack of relationship among various behaviors and thus the disappearance of the very notion of personality even in the limited sense of integration and consistency of the individual. This may be the reason why



different cultures stress specific differentiations rather than an overall complexity.

The mismatching of differentiations that occur when members of different cultures interact is most likely to result in tension, dismay, anger and other emotional disturbances of the heterocultural relationship. Of the many critical incidents collected there are only a few with a happy ending. The episodes were used to build training programs for helping Americans to improve their relationship with members of other cultures. The programs consist essentially in presenting the episodes to the trainee in a sequence designed to facilitate appropriate changes in differentiation. Each episode was followed by four alternative explanations of what happened. After the trainee had chosen one of them he was provided with feedback on the appropriateness of his choice. If his choice was "correct," i.e., the one picking up the cues specific to the characteristics of the target culture, the trainee moved to the next episode. Otherwise he had to try another choice (Fiedler, Mitchell & Triandis, 1970).

When interacting later in a joint task with members of the target culture, trained subjects were superior to control subjects in establishing satisfactory interpersonal relations with their foreign partners (Chemers, Lekhiananda, Fiedler and Stolurow, 1966; Mitchell and Foa, 1969). If the hypothesis of differentiation matching is correct, the difference in behavior between trained and control subjects should be due to a reduction of mismatching, following training. Training may have provided the subject with a more accurate mapping of interpersonal behavior in the target culture. Thus his ability to see the point of view of the other and to behave according to the other's expectations is improved. Tentative evidence of cognitive

change in the expected direction comes from another study.<sup>4</sup> Differentiation among behaviors appropriate to roles in various social institutions, but similar in power relationship, decreased following training in the Thai culture, when American subjects were instructed to take the viewpoint of a Thai. Subjects trained in the Greek culture, on the other hand, showed increased differentiation between family and non-family roles, a change appropriate to the characteristics of this culture (Triandis, Vassiliou, and Nassiakou, 1968). No cognitive changes were found in the control subjects. Likewise no changes were noted in the experimental subjects, when they took their own viewpoint, rather than the one of the target culture (Mitchell and Foa, 1969). If the degree of differentiation can be modified through training, as these results suggest, a much wider field of application will come up for consideration. In particular it might open new possibilities in psychotherapy: as we shall show in the next section.

#### Between Mental Patients and Normals

The idea that mental patients have cognitive structures, dealing with interpersonal relations, that deviate from normalcy appears, with various degrees of explicitness, in the work of Bateson, Jackson, Haley & Weakland (1956), of Fairbairn (1962) and of Federn (1952) among others. For these authors the patient is likely to deviate in the direction of underdifferentiation or to have weaker ego-boundaries, to use an equivalent expression found in psychiatric literature. This would suggest that the differentiation of some mental patients does not match the one found in normals. Most recently Mosher (1969) has proposed a new kind of family therapy for schizophrenics, which consists essentially in discussing and resolving communication failures between the patient and his family, and it leads to

the hypothesis that the cognitive structure of the patient is different from that of normals.

Specific evidence to support the above hypothesis has been recently provided by Edna Foa (in prep.). She administered the Role Behavior Test to 30 schizophrenics and 30 neurotics at the beginning of their hospitalization. The Role Behavior Test is designed to obtain a picture of the cognitive organization of a specific role, such as husband to wife; mother to daughter, and the like. The structural picture is obtained by spelling out the facet design underlying the variables and by predicting from it the empirical interrelationship of the data (Foa, 1966). Edna Foa found that each type of mental patient investigated exhibits both over- and under-differentiation in various areas when compared with normal individuals. Sometimes neurotics and schizophrenics stand at opposite sides of the normal level: when one over-differentiates the other under-differentiates. Thus, the differentiation between the subject behavior toward himself and toward the other is highest for neurotics and lowest for schizophrenics, with the normals inbetween. For behavior ascribed to the other the order is reversed: schizophrenics over-differentiate between self and other as objects, while neurotics under-differentiate. Differentiation between positive and negative behavior is again strongest for neurotics and weakest for schizophrenics, insofar as the behavior of the subject is concerned. With regard to the behavior of the other both patient groups under-differentiate with respect to normals. Patients, on the other hand, differentiate more than normals between actual and ideal behavior. These results suggest that the notion of cognitive complexity would hardly apply here: patients are both more and less complex than normals, depending on which differentiation is

considered. Further work on a larger number of cases will have to be done before these differences are accepted as definitive. Yet the data available so far suggest that the cognitive structure of mental patients is unlike the one of normals so that their differentiations do not match. When these differences between patients and normals are put together with the previously reported experimental findings, they link cognitive diversity to group malfunctioning. It does not seem too far-fetched to suggest, thus, that the notion of differentiation matching is relevant to diagnosis and therapy of mental illness.

It is possible that the pattern of deviation from normalcy is specific to each type of patient. If so, it may become feasible to classify mental patients according to their characteristic abnormalities in differentiation. Such a classification would immediately suggest what changes in differentiation are needed in order to bring a particular type of patient nearer to normalcy. In other words, the diagnosis will suggest the appropriate therapy. The beginning of an attempt toward the development of types of therapy explicitly aimed at modifying differentiation can be seen in Mosher's family therapy (1969) as well as in the training program, briefly described in the previous section, designed to reduce differentiation mismatching in heterocultural groups.

#### Conclusion

This paper has sought to integrate a number of studies concerned with differentiation matching. We have attempted to show that: 1) Differentiation and matching are specific for given facets in the cognitive structure, so that attempts to match overall complexity may entail an unnecessary loss of predictive power. Indeed, higher differentiation in a given facet is

often accompanied by lower differentiation in another one; 2) Adjustment is more likely to occur when the cognitive structure of the individual matches the situational requirements and/or the differentiation pattern of other group members. By way of conclusion it may be appropriate to offer an explanation of this relationship between differentiation matching and the successful handling of interpersonal and task situations. Most cues from the environment, particularly symbolic cultural cues, have little meaning before they are recognized as instances of a given conceptual class. The mapping of cues into classes is a central feature in matching-response models of stimuli perception (McKay, 1963; Miller, Galanter and Pribram, 1960). These models have been concerned with the processing of the cue, once it has been received, rather than with its origin. Considering the latter is particularly relevant in social communication, since an interpersonal cue originates in the cognitive structure of the sender. In consequence such a cue will be understood correctly when the class from which it comes is identical to or, at least, similar to, the class into which it is received. Thus, cognitive organization may be regarded as a device for encoding out-going messages and for decoding incoming ones. When the differentiations of the sender and the receiver are dissimilar in the specific facet involved, the communication received will differ in meaning from the one sent. Suppose an American, who differentiates to a considerable extent between love and status, criticizes the work of an individual from a culture where the love-status differentiation is low. The message sent was "you did a poor job." The message received will be "this man hates me." The resulting communication problems generate, in turn, interpersonal tension and/or poor performance in group tasks.

Cultural standards of differentiation are transmitted to the child by his parents and other persons with whom he communicates. If these standards deviate from the prevailing standards they are likely to be picked up by the child, although the child may deviate for other reasons which are largely unknown at present. A given degree of differentiation may be learned by imitating the differentiating behavior of others and by receiving rewards and punishments contingent upon the differentiated behavior of the child.

These considerations, although tentative, may contribute to an understanding of the effects of differentiation matching and relate them to problems of cognitive development, its cultural diversities and its pathology.

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## Footnotes

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<sup>2</sup>Interestingly enough, differentiations within an individual and between individuals are inversely related here. More generally the within-between relationship is likely to be U-shaped, low differentiators "within" being extreme (high or low) in differentiation "between."

<sup>3</sup>Unpublished research, 1966.

<sup>4</sup>T. R. Mitchell, unpublished research, 1969.

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